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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/537,605  
Filing Date: June 03, 2005  
Appellant(s): SWAYBILL ET AL.

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David J. Gaskey  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 29 October 2008 appealing from the Office action mailed 1 May 2008.

**(1) Real Party in interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,807,723	Salmon et al	02-1989
2002/0185338	Bauer	12-2002
5,361,873	De Jong et al	11-1994

4,537,286	Morris et al	08-1985
2002/0017434	Orrman et al	02-2002

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 6 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Salmon et al (4,807,723) in view of Bauer (US 2002/0185338).

**Re: Claims 1 and 22**, Salmon et al disclose:

- a machine supporting portion (top, center of 14) that secures a machine comprising a motor (10) in a selected position in a hoistway (referenced, Col. 2, Line 19).
- and a sheave supporting portion (top, end of 14) to support at least one sheave; the supporting portions being secured together to form a single structure that supports the machine and the sheave, the single structure being located inside the hoistway.

However, though Salmon et al disclose load-bearing members (20), they are silent regarding a plurality of termination members and their supporting portions each comprising a plurality of metal sheets secured together.

Attention is directed to Bauer who teaches a termination-supporting portion plurality (17, Fig. 1) for securing a plurality of termination members (ends of 16) in a selected position, the termination members being configured to secure an end of associated load-bearing members (16, Para. 0020) near the selected position.

Furthermore, Bauer teaches his supporting portions comprising a plurality of metal sheets secured together (Para. 0017) as "... a frame 15.1 made of sections and a mounting plate 15.2..."

It would have been obvious to one of ordinary skill in the art to modify the reference of Salmon et al with the teaching of Bauer to integrate a termination in the machine-supporting portion as typical of conventional (2:1) rope suspension systems.

**Re: Claim 6**, Salmon et al disclose their machine- and sheave-supporting portions as comprising two lateral beam members (14).

**Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Salmon et al in view of Bauer, as applied to Claim 1, and in further view of Morris et al (4,537,286).

Salmon et al are silent regarding a termination-supporting portion.

Bauer teaches his first and second termination members (17, Fig. 1 and 19, Fig. 2, respectively) having respective first and second termination-supporting portions, wherein his first terminating supporting portion forms a single structure with his machine supporting portion, sheave and termination members, and said single structure is located inside the hoistway.

However, his second termination portion is secured separately of his single structure.

Attention is directed to Morris et al who teach a support device having a large plurality of termination members suspended from termination-support members mounted on overhead beams, machine beams or ... auxiliary beams..." (Col. 3, L. 4) of particular benefit for applications utilizing 2:1 suspension (Col. 1, L. 11), wherein his termination portion comprises a plurality of metal sheets secured together.

It would have been obvious to one of ordinary skill in the art to modify the reference of Salmon et al and Bauer with the teaching of Morris et al to integrate a second termination portion in the machine-supporting portion to accommodate 2:1 rope suspension systems as known in the art for reduction of space and drive capacities.

**Claims 3 and 8 - 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Salmon et al in view of Bauer, as applied to Claim 1, and in further view of de Jong et al.

**Re: Claim 3**, Salmon et al and Bauer disclose a single sheave-supporting portion.

Attention is directed to de Jong et al who their first and second sheave supporting portions to accommodate additional tensioning for maintaining alignment of suspension ropes within the sheave grooves as well as their displacement.

It would have been obvious to one of ordinary skill in the art to modify the reference of Salmon et al and Bauer with the teaching of de Jong et al to provide additional aligning means of suspension ropes for flexibility of installation and smoother operation.

**Re: Claims 8 and 9**, Salmon et al disclose a mounting member near each end of the lateral beam members.

Bauer discloses his mounting member(s) (15.2) in combination with a "... frame (15.1) made of sections..." whereby his mounting member(s) is "... fastened to... rails..." (Para. 0017) that carry a load of the device and associated elevator system components; however, Bauer is silent regarding the details of his frame.

Attention is directed to de Jong et al who teach their device including:

- two spaced lateral beam members (right-left, Fig. 4),
- at least one transverse beam (Fig. 5) extending between and secured to the lateral beam members near each end of the beam members,
- mounting members near each end of each lateral beam member (Fig. 4),
- said mounting members securing the device to a structure that carries a load of the device.
- And a plurality of vertical brace members (raised portions, Fig. 4) connected to each of the mounting members;

It would have been obvious to one of ordinary skill in the art to modify the reference of Salmon et al and Bauer with the teaching of de Jong et al to provide an appropriately constructed and secured support-framing structure.

**Claims 10 and 13, 14 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Salmon et al in view of de Jong et al and in further view of Orrman et al (US 2002/0017434).

**Re: Claim 16**, Salmon et al disclose:

- a machine having a motor (10) and a drive sheave (12) inside a hoistway,
- an idler sheave (16) inside a hoistway,
- an elevator cab ("car"),
- a counterweight ("C.W.")
- a plurality of elongated load bearing members (20) associated with the cab and counterweight, said load bearing members being moveable about the drive sheave and idler sheave in response to operation of the machine;
- a single support device in the hoistway that secures the machine and sheave in a desired position in the hoistway relative to the cab and counterweight;
- the support device includes two lateral beam members (14) that provide support for the machine and the sheave, the lateral beam members are spaced from each other;

however, Salmon et al are silent regarding a plurality of termination members associated with the ends of the load-bearing members, wherein said termination members are secured by their single support device, as well as their idler sheave and drive rotating about non-parallel axes and a wrap angle of at least 180° around their drive sheave.

Attention is directed to de Jong et al who teach the structure of Salmon et al with an idler sheave (8, Fig.'s 4 and 5) and their machine comprising a motor (1) and drive sheave (3). The orientation of their traction and idler sheave(s) incorporate an offset(s) with respect to their parallel axes in order to accommodate a desired frictional loading without compromising the service life of their ropes (4, Fig. 3 and Fig. 6b). Furthermore,

de Jong et al teach their idler sheave and drive sheave positioned relative to each other so that the elongated load bearing members (4) extend vertically, deflect about the idler sheave in a generally horizontal direction and then are wrapped at least 180° around the drive sheave, whereby their idler sheave and drive sheave rotate about parallel axes.

However, though terminations at ends of elongated load bearing members for supporting an elevator cab and counterweight are known in the art, de Jong et al are silent regarding terminations.

Further consideration is directed to Orrman et al who teach their terminations (10, 11) associated with the ends of their load bearing members (9) for suspending their cab and counterweight, their terminations fixed to a common support device that secures the machine and terminations in a desired position inside the hoistway relative to their cab (2) and counterweight (4) as a "...compact package... suited for... modernization projects... and (sic) an elevator without a machine room..." (Para. 0011).

It would have been obvious to one of ordinary skill in the art to modify the reference of Salmon et al with the teaching of de Jong et al and Orrman et al, to provide a single support device for the machine, sheave and terminations in a 2:1 suspension arrangement for savings in space and drive capacity.

**Re: Claims 10 and 13,** Salmon et al disclose their support device includes two lateral beam members to support the machine and idler sheave, the lateral beam members are spaced apart from each other, and at least one transverse member; however, Salmon et al are silent regarding terminating members and their support.

De Jong et al disclose both lateral and transverse beam members; however, De Jong et al are silent regarding at least one termination member secured to their lateral beam members.

It is Orrman et al who teach their first and second terminations (10, 11) secured to either end of their support device, and thereby the transverse beam members of De Jong et al, to provide a single support device for the machine, sheave and terminations for operability in 2:1 roping suspensions and compactness.



**Re: Claim 14**, Salmon et al disclose their support comprise a plurality of metal beam members.

#### **(10) Response to Argument**

Appellant's primary arguments are directed toward the prosecutions of **Claims 1, 2, 10, 16 and 22**, in particular towards the prosecution of **Claims 1 and 22**, for which appellant argues:

- a lack of *prima facie* case of obviousness in making the combination of the references of Salmon et al and Bauer, and
- a misinterpretation of the disclosure of Bauer with respect to his frame 15.1 is made of sections and a mounting plate 152., wherein said sections and plate are misconstrued by the Examiner as "a plurality of metal sheets secured together for each of the supporting portions" as claimed, in that appellant has intended his "metal sheets" to be of form "distinct from traditional metal beams or tubes"

Further to **Claim 2 as well as Claims 10 and 16**, appellant argues respectively:

- the teachings of Morris et al "would rearrange the components of Bauer... in a manner that would interfere with the principle of operation of ..." Bauer, in that Bauer "... requires separated, supported terminations on a "counterweight side" and an opposite "car side" of the hoistway..." whereby Morris et al teach "... a single location for a plurality of terminations..." and
- improper hindsight reasoning in making the combination of Salmon et al, Bauer and Morris et al; *as well as*
- "... particular angular offset between the sheave axes..." of Salmon et al to accommodate an "intended interleaved roping arrangement..." impedes a teaching of de Jong wherein such offset is not found, and that "... the Examiner is wrong that de Jong's arrangement is a substitute for Salmon's...", and
- "...the proposed modification completely alters the Salmon reference..."

With respect to appellant's arguments pertaining to **Claims 1 and 22**, as reviewed in previous office actions, the term "metal sheet" is sufficiently broad to enable a teaching of Bauer as to his "... supporting construction 15, which consists of a frame 15.1 made of sections and a mounting plate 15.2..." (Para. 0017, Figure 1), thereby teaching a plurality of metal sheets secured together as a framework adequate to support loads associated with an elevator drive.

Furthermore, elements of appellant's invention described as "Two lateral beam members 50 and 52 ... have a generally C-shaped cross section" (Para. 0026, Fig. 3) challenge appellant's claimed "... plurality of metal sheets secured together for each of the supporting portions" in view of appellant's intent that his "metal sheets...be...distinct from traditional metal beams or tubes".

Bauer teaches a support arrangement mounted to his guide rails, said support arrangement forming a single structure for supporting his machine, sheave and terminations members, the latter of his first termination portion, wherein his support arrangement comprises a plate and sectional frame construction reasonably interpreted to comprise metal sheets secured together to form a single structure.

Therefore, a lack of prima facie obviousness is not persuasive.

With respect to the second set of claims and commencing with a review of Morris et al, the appellant is correct in his review of their inventive feature as "reducing the cross-sectional area occupied by the ropes at the hitch plate" However, Morris et al teach further the ability to have multiple, disparate termination members supported from a common, as well opposing/interconnected, termination supporting portions, wherein said portions can comprise beams that support a machine. The 2:1 suspension of their elevator car and the 1:1 suspension of their counterweight are "for example", thereby not precluding a 2:1 suspension of their counterweight (Col. 2, L. 36 – 43 and Claim 7).

Therefore, Bauer and Morris et al teach the features lacking in Salmon et al, to accommodate a 2:1 suspension for known features such as reduction in drive capacity

and superior leveling control as reviewed in previous office actions; thereby, obviating a case of hindsight reasoning.

With respect to an inability of modifying Salmon et al with the teaching of de Jong et al, the appellant is correct that the reference of Salmon et al discloses the idler and drive sheaves having non-parallel axes in light of necessary offset to accommodate the rope pattern. De Jong et al, however, teach axes of their idler and drive sheaves as being parallel, which is enabled by an offset (T, U) in a plane of rotation of said idler sheave in relation to that of the drive sheave, while accommodating a plurality of load bearing members and promoting their service lives. Hence, De Jong et al teach to overcome an aspect of Salmon et al.

With respect to applicant's arguments that the reference of Salmon et al is altered by the teaching of de Jong et al, the supporting portions of Salmon et al are of primary interest, in that Salmon et al disclose an orientation and scope of a motor, a drive sheave, a diverting sheave and beam elements comprising their supports, whereby De Jong et al teach a support device employing multiple diverting sheaves, a drive sheave, a diverting sheave and beam elements comprising their supports. Both employ a variation of extended wrap angles and the offset of diverting sheave(s) to accommodate the suspension planes of their respective counterweight and elevator car. Consequently, the teaching of de Jong et al in terms of multiple diverting sheaves as well as their interdependent orientation and alignment would be applicable for consideration of one having ordinary skill in the art.

In general, with respect to the appellant's arguments that a case for obviousness was not sufficiently put forth in the rejection(s), the prior art of record incorporate the limitations and teachings as derived from their respective disclosures that establish and support reasonable motivation(s) to combine.

With respect to **Claims 3 and 8 - 9**, appellant has not refuted the teaching of de Jong et al, but rather reiterated the lack of anticipation and teaching of the cited prior art of record with respect to the independent claim from which the claims depend.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Stefan Kruer/

Examiner, Art Unit 3654

14 January 2009

Conferees:

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TQAS TC 3600

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